

**Space Science Seminar
Tuesday, 2014 October 28
10:30 a.m.
NSSTC/2096**

***In-Situ* Absolute Geochronology for Planetary
Exploration**

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In planetary sciences, *in-situ* absolute geochronology is a scientific and an engineering challenge. Until now, the age of the Martian surface can only be determined by crater-density counting. However, this method has important uncertainties and needs to be fit with absolute ages. Recently, one attempt of *in-situ* absolute dating on Mars with Curiosity has been published. It shows the high interest of this measurement and also reveals the difficulties to achieve this work without a dedicated instrument. At the same time, several projects are trying to solve this problem with different methods and techniques. We will detail the protocol used in the Potassium-Argon Laser Experiment (KArLE) project developed here at the NSSTC. We will also discuss the main methods proposed by these projects, the issues revealed, and their possible future.

<http://solarscience.msfc.nasa.gov/colloquia/>